

9. Radiation Detection Instruments

Regulations: 180 NAC 3-011, 180, NAC 4-021.04, 180 NAC 4-048

Criteria: *A radiation survey meter should be capable of detecting gamma radiation and be checked for functionality before use (e.g. with the gauge or a check source)*

Survey meters are not normally required if the applicant plans only to use the gauges and devices for their intended use and does not perform non routine maintenance on the gauges and/or devices involving access to the sources and source holders.

However, if the applicant does intended to perform non-routine maintenance, the survey instrument(s) that will be available at each site where non-routine maintenance will be performed should be specified. At least one low range beta-gamma (0-20 or 0-50 mR/hr) survey meter should be available at each maintenance area for monitoring during and following the non-routine maintenance procedures. Approval of non-routine maintenance also requires submittal of personnel qualifications and non-routine maintenance procedures for review.

There are other situations where a survey meter is needed to determine whether a gauge's shielding is intact or if the radioactive source has been breached (e.g., receipt of a damaged gauge, incidents involving a gauge being run over at a construction site, etc.). In most cases, the source will remain intact. Nonetheless, such incidents necessitate seeking technical assistance to arrange for a timely evaluation of the source's integrity following an incident or receipt of a damaged package. Therefore, emergency procedures need to include instructions regarding access to a survey meter.

Appendix N "Guide to SI Units for Radiation Protection: may be helpful to you.

Response from Applicant: Provide the following:

- "We will possess and use, a radiation survey meter that meets the criteria in the section entitled 'Radiation Detection Instruments' in Regulatory Guide 3.4, 'Radioactive Material --Guidance for Portable Gauges and X-ray Fluorescence Analyzers' Revision 3, in the event of an incident."

OR

- "We have access to a radiation survey meter that meets the criteria in the section entitled 'Radiation Detection Instruments' in Regulatory Guide 3.4, 'Radioactive Material – Guidance for Portable Gauges and X-ray Fluorescence Analyzers' in the event of an incident " **And**
- Attach a plan of how an instrument will be obtained.

Note:

- Applicants who plan to perform non-routine maintenance that requires removing the source or source rod from the gauge will need to possess and use a radiation survey meter that meets more stringent criteria. Refer to the section on Radiation Protection Program - Maintenance and Appendix J for more information.